



**MASSACHUSETTS DEPARTMENT OF TRANSPORTATION
MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

**STATE IMPLEMENTATION PLAN – TRANSIT COMMITMENTS
MONTHLY STATUS REPORT**

MARCH 21, 2013

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INTRODUCTION

This report is being submitted to the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA) to provide an update on the status of the four outstanding State Implementation Plan (SIP) transportation control measure (TCM) projects: (1) improvements to the Fairmount Line, (2) the siting and construction of 1,000 new commuter parking spaces, (3) the design of the Red Line/Blue Line Connector, and (4) the construction of the Green Line Extension to College Avenue (Medford) and Union Square (Somerville). The U.S. Environmental Protection Agency (EPA) approved the projects as part of the SIP on July 31, 2008. A complete description of the process by which those projects were included in the SIP is provided in the Boston Region MPO's long-range transportation plan – JOURNEY TO 2030 Amendment adopted on September 24, 2009 and amended on November 19, 2009. As part of the approval of the JOURNEY TO 2030 Amendment, FHWA and FTA stated:

“The demonstration of timely implementation of TCMs in the SIP is required for a conformity determination. In order to ensure that the TCMs are completed as scheduled, the Executive Office of Transportation and Public Works shall prepare monthly progress reports to FTA, FHWA, and EPA. In addition to these progress reports EOT [MassDOT after November 1, 2009] shall convene monthly meetings with all interested parties to discuss the status of each TCM. This reporting requirement will be effective starting November 2009.”

This is the thirty-second update of the required monthly status reports, to be presented to the Boston Region MPO at their March 21, 2013 meeting. This report builds on the *State Implementation Plan Transit Commitments 2012 Status Report*, submitted to the Massachusetts Department of Environmental Protection on July 22, 2012, and the *State Implementation Plan Transit Commitments 2012 Status Report – Agency Response to Public Comments*, submitted January 23, 2013. This report will be posted on the website of the Massachusetts Department of Transportation.

Following the submittal of the 2012 *Agency Response to Public Comments*, MassDOT is no longer reporting on the 1,000 Parking Space requirement, as that project is complete.

I. FAIRMOUNT LINE IMPROVEMENT PROJECT

Project Description

The 9.2-mile Fairmount commuter rail line runs from South Station, currently serves four stations (Uphams Corner, Morton Street, Fairmount, and Readville) in the communities of Dorchester, Mattapan, and Hyde Park, and terminates in the Readville section of Boston. The line, which uses right-of-way entirely owned by the MBTA, also includes 41 bridges. It is the only commuter rail line that exclusively serves neighborhoods within the City of Boston, but ridership has historically been low and passenger facilities along the line do not meet modern standards.

The Fairmount Line Improvement Project includes the rehabilitation of the existing Uphams Corner and Morton Street Stations, construction of four new stations – Newmarket, Four Corners, Talbot Avenue, and Blue Hill Avenue – reconstruction of six existing railroad bridges (located over Columbia Road, Quincy Street, Massachusetts Avenue, Talbot Avenue, Woodrow Avenue, and the Neponset River), and construction of a new interlocking and upgraded signal system (required to advance the bridge reconstruction work). These upgrades will enhance future service, allowing for increased frequency on the line.

Project Funding & Cost

In August 2007, MassDOT and the MBTA executed a contract to transfer approximately \$39 million from the ‘immediate needs’ Transportation Bond Bill of 2007 (which provides state bond funding to support the costs of the SIP projects) from MassDOT to the MBTA to support the costs of (1) signal work, (2) reconstructing the Columbia Road, Quincy Street, and Massachusetts Avenue Bridges, (3) designing the Talbot Avenue, Woodrow Avenue, and Neponset River Bridges, and (4) designing the Newmarket, Talbot, and Blue Hill Avenue Stations.

A supplemental funding agreement providing \$23,756,574 in Commonwealth bond funding was executed in June 2009 in order to advance the construction of the station at Four Corners. A third funding agreement, approved in June 2011 by the MBTA Board of Directors in the amount of \$61,616,500, has allowed the remaining stations (including Blue Hill Avenue) and bridges, to advance. These contracts total approximately \$124.4 million in spending on the Fairmount Line Improvement Project to this point.

SIP Deadline

“Before December 31, 2011, construction of the following facilities shall be completed and opened to full public use: Fairmount Line improvements consisting of enhancements of existing stations including without limitation: platform extensions; improved lighting and improved access; a new station in the general location of Four Corners, and a new station in each of the neighborhoods of Dorchester, Mattapan and

Roxbury; and bridge upgrades and other measures to improve service and increase ridership (the Fairmount Line project).”

Project Status

Systems

Necessary upgrades to interlocking and signal systems have been completed and are currently in use, allowing for the reconstruction of structurally deficient bridges along the Fairmount Line.

Bridges

A construction contract to replace the Columbia Road, Quincy Street, and Massachusetts Avenue bridges was awarded in October of 2007, with the construction work completed in 2010. The design of the Talbot Avenue, Woodrow Avenue, and Neponset River bridges is completed and construction is underway (see “New Stations” below). The Talbot Avenue and Woodrow Avenue bridges will be constructed under the same construction contract as Talbot Avenue Station, while three Neponset River bridges are being advertised separately (see below).

The project includes replacing three bridges over the Neponset River. Bids for replacement of the northernmost Neponset River Bridge were opened on November 3, 2010. The low bidder was Barletta Construction. Contract authorization was given at the January 2011 MBTA Board of Directors meeting, and the MBTA issued a notice to proceed on February 11, 2011. The project duration is approximately 30 months and is currently 99% complete, with project completion to occur in August 2013.

The two southern Neponset River Bridges (one just south of Fairmount Station, and one just north of Readville Yard) were packaged with environmental remediation of the Yard 5 area. Bids for this group of projects were opened on October 13, 2010. The low bidder was S&R Construction Enterprises, with contract award authorization given at the January 2011 MBTA Board of Directors meeting. The notice to proceed for this contract was issued March 1, 2011. The project duration is approximately 29 months and is currently 99% complete, with project completion to occur in August 2013.

Existing Stations

The MBTA held a station-opening at Uphams Corner on January 23, 2007. The reconstruction of Morton Street was celebrated at a station-opening on July 17, 2007. New elements at both stations include extended high-level passenger platforms, accessible walkways, canopies, benches, windscreens, signage, bicycle racks, variable messages signs, lighting, and landscaping. Work at both stations is now complete.

New Stations

Four Corners Station is under construction and is now 92% complete. A notice to proceed was issued to S&R Construction Enterprises, Inc. on January 28, 2010. Four Corners Station has experienced delays due to unforeseen geotechnical conditions,

relocation of existing utilities, and a redesign of the inbound sloped walkway structure at Geneva Avenue. The current substantial completion date for Four Corners Station is April 2013 with final completion to occur in June 2013. The delay in completion dates can be attributed to extra work required to construct the Washington Street outbound ramp structure, where the discovery of a rock vein, not identified in the engineer's test borings, required reengineering, installation of additional soil nails due to a difference in existing soil conditions, and construction of additional structural elements to support the inbound sloped walkway and retaining walls.

The construction of **Talbot Avenue Station** and the **Talbot and Woodrow Avenue Bridges Rehabilitation** projects were advertised and opened for bids in May 2010. The MBTA Board of Directors authorized a construction contract to Barletta Construction on September 10, 2010 and the notice to proceed was issued on November 22, 2010. The construction period is expected to last approximately twenty-six months, with substantial completion of the station and the bridges in November 2012 and anticipated final completion of work by January 2013. Construction is currently 98% complete. The structural replacement of the Woodrow Avenue Bridge occurred during the first weekend of November 2011; and it was completed one day ahead of the planned schedule. The Talbot Avenue Bridge was replaced during the third weekend of December 2011, which was also completed one day ahead of the planned schedule. These bridges continue to be worked on in conjunction with the station construction.

The Talbot Avenue Station became on-line and operational in mid-November 2012. Neighborhood abutter privacy concerns brought forth by the Codman Square Neighborhood Development Corporation and Representative Russell Holmes' office resulted in the commitment to install a 6-foot privacy section on the existing 8-foot black vinyl-coated chain link fence. This work must be completed by hand and is precluded by winter weather conditions. The MBTA anticipates this additional work to commence in Spring 2013 and will not negatively impact daily operations.

Construction of **Newmarket Station** was awarded to S&R Construction Enterprises at the MBTA Board of Directors meeting on October 6, 2010. The MBTA issued a notice to proceed on December 13, 2010. Construction is currently 85% complete. The substantial completion and completion of work are currently anticipated for May 2013 and July 2013, respectively. The extension of the completion dates can be attributed to: the discovery of an existing power duct bank for the South Bay Shopping Center not previously discovered or identified on any existing condition NStar plans; the driven-pile redesign for inbound and outbound retaining walls; and the delay in manufacturing the precast concrete platform panels.

The proposed **Blue Hill Avenue Station** has been the subject of significant community controversy over the past three years. In early 2009, after design work for the station was well underway (60% design), concerns about negative impacts to surrounding residences were raised by a small number of abutters to the proposed station, which at

the time was proposed to have two side platforms. In an effort to address these concerns, the MBTA conducted a new analysis of alternative station locations. This additional analysis determined that at least one alternative location (River Street) was infeasible due to track curvature, and that the two other alternative locations (north of Blue Hill Avenue and south of Cummins Highway) would have greater impacts to abutting residential properties than would the original design, while serving fewer riders at increased cost. The MBTA developed one additional alternative that made use of a center-island platform at the original station site, therefore mitigating some abutter concerns by locating the platform further from homes and backyards; the MBTA also developed a conceptual design for this proposal. The MBTA continues to encounter opposition from some abutters, however, who question the need for and appropriateness of any commuter rail station in this location. The MBTA has responded to the immediate neighborhood concerns by completing an additional analysis of noise and vibration impacts and mitigation measures.

After this further review, the MBTA and MassDOT made a final determination on the Blue Hill Avenue station in May 2011. Station design is proceeding at the original site with the center-island platform concept. The necessary redesign of the station has now reached 60%. MassDOT is continuing to work with abutters to mitigate potential construction impacts. Given the unexpected delays, it is unlikely that the Blue Hill Avenue Station will be completed before 2015 at the earliest.

Potential Challenges

Community concerns (described above) regarding the construction of a station at Blue Hill Avenue, as well as construction challenges throughout the Fairmount Line, have resulted in a delay of the overall Fairmount Line Improvement Project beyond the December 31, 2011 SIP deadline. MassDOT anticipates that the Four Corners, Talbot Avenue, and Newmarket Stations and their attendant bridges and other infrastructure will be completed incrementally in 2013, beyond the SIP deadline. A reliable completion date for Blue Hill Avenue station continues to be unknown at this time, although the MBTA is working to advance the project as quickly as possible.

MassDOT recognizes that this delay has triggered the Project Delay component of the SIP regulation. Therefore, MassDOT prepared a Petition to Delay and an Interim Emission Offset Plan, to be implemented for the duration of the delay. Both the Petition and Offset Plan were submitted to DEP, and posted to MassDOT's SIP website.

As described in the Offset Plan, MassDOT estimated the reduced emissions expected to be generated by the implementation of the new Fairmount Line stations. MassDOT and the MBTA, in consultation with Fairmount Line stakeholders, identified a set of potential interim emission reduction offset measures that would meet the emissions reduction targets. MassDOT submitted these proposed measures to DEP in a July 27, 2011 petition, after which time MassDOT and the MBTA continued to work to refine the offset concepts for implementation, including a second letter to DEP (dated November

29, 2011) describing changes to the proposed offsets. On January 2, 2012 (the first weekday following January 1), the offset measures were implemented: additional trips via a dedicated shuttle on the CT3 bus route between Andrew Station and Boston Medical Center; and increased weekday frequency on the Route 31 bus.

II. RED LINE-BLUE LINE CONNECTOR - DESIGN

Project Description

The proposed Red Line/Blue Line Connector consists of an extension of the MBTA Blue Line under Cambridge Street to the Red Line station at Charles/MGH. As currently envisioned, the project consists of two major components: (1) a new tunnel extending the Blue Line under Cambridge Street from Government Center to Charles Circle and (2) a new underground Blue Line station connected to the existing Charles/MGH Station. The project will also consider whether and how to relocate Bowdoin Station.

The SIP regulations require only that MassDOT complete final design for the project. Construction of the Red Line/Blue Line Connector is not required.

Project Funding & Cost

The 'immediate needs' Transportation Bond Bill of 2007 provides state bond funding for the design of the Red Line/Blue Line Connector project. The estimated funding needed to complete design has increased from the previous \$29 million estimate to \$52 million, according to the new cost estimates completed during the development of the DEIR.

SIP Deadline

Before December 31, 2011, complete final design of the Red Line/Blue Line Connector, from the Blue Line at Government Center to the Red Line at Charles/MGH Station.

Project Status

On September 14, 2007, MassDOT filed an Expanded Environmental Notification Form with the Massachusetts Environmental Policy Act Office. A public scoping session was held on October 17, 2007, and the Secretary of Energy & Environmental Affairs issued a certificate on the project on November 15, 2007. Based on the project scope as defined in the MEPA Certificate, MassDOT issued a Request for Proposals on March 27, 2008 for a consultant to complete the necessary environmental reviews and engineering for the project. MassDOT awarded a consultant contract during the summer of 2008.

MassDOT has completed the following environmental reviews and conceptual engineering for the project:

Draft Environmental Impact Report

The Draft Environmental Impact Report (DEIR) was filed on March 31, 2010
A MEPA Certificate for the DEIR was issued on May 28, 2010

Public Outreach

Six Working Group meetings were held
A public hearing on the DEIR was held on May 3, 2010
A project website has been launched and is maintained at:
www.mass.gov/massdot/redblue

Refinement of Alternatives/Conceptual Engineering

Refinement of potential alternatives was performed for three options: (1) a no-build option, (2) a tunnel option with a relocated Bowdoin Station, and (3) a tunnel option with Bowdoin Station closed. The refinement of alternatives also included an evaluation of potential construction options (a mined tunnel vs. a cut-and-cover tunnel) and construction phasing schemes.

A *Definition of Alternatives/Conceptual Engineering Report* was completed in November 2009.

Design Criteria

A draft Design Criteria Report was prepared and was included with the Definition of Alternatives Report.

Alternatives Analysis

An Alternatives Analysis Technical Report was completed on March 31, 2010.

Design

The conceptual design of the project is complete.

Cost Estimates

Conceptual cost estimates were included in the *Definition of Alternatives Report*.

Construction Staging and Sequencing Plans

Construction staging and sequencing plans were included in the DEIR.

Real Estate Requirements

Potential real estate impacts were identified as part of the DEIR.

Potential Challenges

MassDOT has made a good faith effort to meet the commitment to complete final design of the Red Line/Blue Line Connector, including the accomplishments listed above. However, as part of the environmental review and conceptual design process, MassDOT determined that the ultimate construction costs for the project will far outstrip the cost projections in place at the time that the SIP regulation was promulgated: \$290 million at the time of the SIP regulation versus the current best estimate of \$748 million (escalated to year of expenditure). MassDOT has already spent \$3 million to advance the project through environmental review and conceptual design, but the current \$52 million estimate to complete final design substantially exceeds the \$29 million last identified for the effort in the 2009 Regional Transportation Plan for the Boston Region. Furthermore, MassDOT has been unable to identify funding with which to construct the Red Line/Blue Line Connector at any point in the next 20 years. As a matter of policy, MassDOT believes that it is irresponsible to spend precious public funds to design and permit transportation projects for which there are no

identified construction funds, particularly given the need to continually refresh planning and permitting materials for major projects. To pursue final design of the Red Line/Blue Line Connector project at this point would be to squander resources that could otherwise be spent on projects for which construction funds are already committed.

Therefore, MassDOT has initiated a process to amend the SIP to permanently and completely remove the obligation to perform final design of the Red Line/Blue Line Connector. To that end, MassDOT has officially sought approval from DEP to support a SIP amendment process, which will include public input and discussion. MassDOT is not proposing to substitute any new projects in place of the Red Line/Blue Line Connector commitment, given the absence of any air quality benefits associated with the current Red Line/Blue Line commitment (final design only). Correspondence from MassDOT to DEP formally initiating the amendment process was submitted on July 27, 2011, and is posted to the MassDOT website.

On September 13, DEP held two public hearings (at 1pm and 5pm) to take public comment on MassDOT's proposed amendments to 310 CMR 7.36, Transit System Improvements, including the elimination of the requirement to complete final design of the Red Line/Blue Line Connector. Between the two hearings there were 16 attendees, 10 of whom gave oral testimony. All those who spoke at the hearings spoke in favor of DEP not removing the commitment. DEP accepted written testimony until September 24, 2012.

III. GREEN LINE EXTENSION TO SOMERVILLE AND MEDFORD

Project Description

This project – the purpose of which is to improve corridor mobility, boost transit ridership, improve regional air quality, ensure equitable distribution of transit services, and support opportunities for sustainable development – will extend the MBTA Green Line from a relocated Lechmere Station in East Cambridge to College Avenue in Medford, with a branch to Union Square in Somerville.

Proposed Stations

New Green Line stations are currently proposed for:

College Avenue, Medford – Located at the intersection of College Avenue and Boston Avenue in Medford, adjacent to Tufts University. The station platform will be located on the north side of the College Avenue Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and College Avenue, as well as from the Burget Avenue neighborhood, which lies northeast of the station site.

Broadway/Ball Square, Medford/Somerville – Located at the intersection of Broadway and Boston Avenue on the north side of Ball Square. The station platform will be located on the north side of the Broadway Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from both Boston Avenue and Broadway. An electrical substation, needed to support the Green Line Extension, will be installed at this location.

Lowell Street, Somerville – Located at the Lowell Street Bridge, which crosses over the MBTA Lowell Line adjacent to the proposed extension of the Somerville Community Path. The station platform will be located on the north side of the Lowell Street Bridge. Access to the station will be provided from Lowell Street.

Gilman Square, Somerville – Located in the vicinity of the Medford Street crossing of the MBTA Lowell Line, behind Somerville City Hall, Public Library, and High School. The station platform will be located on the north side of the Medford Street Bridge, which crosses over the MBTA Lowell Line. Access to the station will be provided from Medford Street. The proposed extension of the Somerville Community Path will be located in close proximity and with a connection to the station, and an electrical substation needed to support the Extension will also be installed adjacent to the Community Path on the south side of the corridor.

Washington Street, Somerville – Located within the footprint of the Washington Street Bridge, proximate to Somerville’s Brickbottom, Inner Belt, and Cobble Hill neighborhoods. The station platform will be located south of the Washington Street undergrade crossing of the MBTA Lowell Line. Access to the station will

be provided via entrances located under or adjacent to the south abutment of the bridge, in conjunction with improved sidewalk and street-crossings in the area. The proposed extension of the Somerville Community Path will be located in close proximity to the station.

Union Square, Somerville – Located east of Prospect Street in the vicinity of Union Square in Somerville. The station platform will be located within the MBTA Fitchburg Line right-of-way east of Prospect Street. Access to this station will be provided from both the street and bridge levels of Prospect Street.

Vehicle Storage and Maintenance Facility

The Green Line Extension will also require the construction of a new light rail vehicle storage and maintenance facility in the vicinity of the Green Line Extension. The facility will be constructed on an L-shaped parcel in the Innerbelt area of Somerville that is adjacent to the Boston Engine Terminal. The MBTA must acquire certain parcels of private property and relocate select businesses in order to clear the site and construct the vehicle facility at this location.

Somerville Community Path Extension

The Green Line Extension project also includes the design of the proposed extension of the Somerville Community Path from south of Lowell street to the Inner Belt area of Somerville (not part of the SIP commitment).

Project Funding & Cost

MassDOT is pursuing federal funding through the competitive FTA New Starts program to support the design and construction of the Green Line Extension project. MassDOT and the MBTA are honored that the Green Line Extension project was selected by the FTA for approval into Preliminary Engineering in June 2012. On January 9, 2013, FTA published a Federal Register final rule establishing a new regulatory framework for FTA's evaluation and rating of major transit capital investments seeking funding under the Moving Ahead for Progress in the 21st Century Act (MAP-21) program. Under the New Starts/MAP-21 program rules the GLX is considered by FTA to have advanced into "Engineering".

The Green Line Extension project is, in many ways, an excellent candidate project for the New Starts program. The project rates well in terms of: anticipated ridership; environmental benefits; the extant policies and programs in the corridor and region that encourage public transit usage; and the strong and sustained support for the project from elected officials and the public. However, the fundamental financial realities facing the MBTA – a substantial annual operating deficit as well as a multi-billion-dollar backlog in maintenance and upgrade needs – pose a real challenge to completion of the application for and ultimate completion of the negotiations associated with a Full Funding Grant Agreement for the Green Line Extension project.

In order to submit the September 2013 update to FTA and to initiate negotiations on a Full Funding Grant agreement in February 2014, which will solidify FTA's financial participation in the project, the state must move from hypothetical proposals to concrete steps toward a long-term solution for the MBTA's funding deficiency. Without progress on this issue, the New Starts negotiations cannot be initiated or completed, thus delaying the corresponding construction start dates. It is also highly probable that without substantial progress on the identification of new revenue sources and the completion of the financial plan, the FTA will decline providing financial assistance to the project all together.

In addition to federal funding, MassDOT and the MBTA plan to use Commonwealth funds to support the design and construction of the Green Line Extension project. These funds will be raised with the backing of authorizations made to support the SIP projects in Transportation Bond Bills of the past several years. At present, MassDOT has \$624 million available in active Transportation Bond Bill authorizations for the SIP projects. This does not include the monies encumbered to support current projects.

The recently released MassDOT finance plan, "The Way Forward," and the transportation funding proposals are included in the January 2013 Governor's Budget submittal. If approved by the State legislature, this funding would provide the solution to the issues raised in the New Starts process with regard to funding.

SIP Deadline

Before December 31, 2014, construction of the following facilities shall be completed and opened to full public use: 1. The Green Line Extension from Lechmere Station to Medford Hillside; 2. The Green Line Union Square spur of the Green Line Extension to Medford Hillside.

Project Status

Environmental and Funding Approvals:

State-level environmental review (MEPA) was completed in July 2010. Federal-level environmental review (NEPA) documents were submitted to the Federal Transit Administration in September 2011, and a public hearing was held on October 20, 2011 (to accompany a 45-day public comment period). A Finding of No Significant Impact (FONSI) was issued by the Federal Transit Administration on July 9, 2012. The July 2012 release of a FONSI completed the federal-level environmental review process, approximately seven months beyond what was anticipated in the 2011 Status Report.

As stated above, MassDOT and the MBTA continue to work with the Federal Transit Administration to seek funding for the Green Line Extension project under the FTA New Starts capital funding program. A draft New Starts submittal was first presented to FTA in September 2011 for its review. A second, near final, New Starts submittal, including updated Operations & Maintenance (O&M) modeling information, was submitted to FTA for formal evaluation and rating on December 27, 2011. The last remaining O&M

information, completing the application package, was submitted in late January 2012. On June 11, 2012, the MBTA received approval from the FTA for the Green Line Extension project to enter Preliminary Engineering. This approval represents the culmination of this portion of the New Starts application process. Approval into the New Starts pipeline means that the MBTA may be able, in the future, to seek reimbursement from FTA for expenditures incurred after this date associated with the Green Line Extension project. However, final authority to seek such reimbursements depends upon the Green Line Extension project being able to successfully continue to compete against other public transit projects within the New Starts program. In order for this to occur, the Green Line Extension project must continue to advance the design and update the estimate for inclusion in the application associated with the full funding grant agreement.

Therefore, entry into Preliminary Engineering is a critical step for the Green Line Extension project and a necessary precondition for receiving federal support; however, it does not guarantee that federal funding will ultimately be available for the project. It does, however, make any design costs going forward eligible for federal reimbursement, should the MBTA ultimately succeed in obtaining a Full Funding Grant Agreement.

Project Delivery:

The MBTA and its Program Management/Construction Management (PM/CM) team completed Advanced Conceptual Engineering for the Green Line Extension project late in the summer of 2012. The team is advancing the project in accordance with a revised project delivery approach which will divide the project into multiple phases (described in more detail below).

In September 2012, the MBTA completed the process to procure an Advanced Preliminary Engineering/Final Design (APE/FD) - a joint venture of AECOM and HNTB who will extend the design through both Advanced Preliminary Engineering and Final Design – with MBTA Board approval on September 12, 2012, and Notice to Proceed on September 20, 2012. Since then, the PM/CM team completed the kick-off process, as well as a series of knowledge transfer sessions through October and November to bring the APE/FD team up to speed on the many elements of the project.

In November 2012, the APE/FD team held an internal kick-off meeting, commencing the Advanced Preliminary Design process. The PM/CM team continues to act as program managers, providing services as extension of staff to the MBTA. The APE/FD contract was executed in February, permitting the signing of the geotechnical subcontracts which will allow the geotechnical investigation program to proceed. The proposed retaining walls has been given top priority; however, the APE/FD has proceeded with the overall retaining wall design based on agreed-upon conservative geotechnical assumptions and the design will be modified as information becomes available.

In accordance with state requirements, the MBTA has also procured an Owner's Representative (OR) to support and guide the MBTA throughout the implementation of the project. The OR provides oversight services to the Commonwealth, as well as structural peer review and value engineering services on the project, and has been participating in weekly project meetings and performing review functions.

A formal Value Engineering (VE) Workshop was held in early November 2012. The final VE recommendations were presented to the MBTA Value Engineering Review Committee (VERC) on December 13, 2012. The GLX project teams' report and recommendations have been signed off by each of the members of the VERC. These items are being added to the configuration management plan listing as changes to the baseline and the design team is moving forward with the accepted changes.

New Green Line Vehicles:

Procurement of 24 new Green Line vehicles needed to support the operation of the Green Line Extension is ongoing. The MBTA advertised for the new vehicles in January 2011 and held a pre-bid meeting for prospective bidders in February 2011. Proposals were submitted to the MBTA by two potential builders of the new Green Line vehicles on June 13, 2011, and are now under review by the MBTA Technical Selection Committee. Approval by the MBTA Board has been pushed out as the review continues. To date, pricing in the proposals has been extended month to month by both proposers.

Real Estate:

Completion of an agreement with Pan Am Railways in March 2011 allowed the Commonwealth to acquire land and track vital to the construction of the project. MassDOT and the MBTA are presently collaborating on background and support tasks associated with the balance of the real estate work for the Green Line Extension project. A confirmatory survey of the right-of-way limits and adjacent property lines is now complete and the data was used in the Advanced Conceptual design efforts and as confirmation for typical sections, track layouts, and an update to the listing of the potential property impacts. These revised impacts will be confirmed as part of the follow-on Advanced Preliminary design work.

MassDOT and the MBTA were granted approval from FTA to begin certain pre-acquisition activities ahead of the completion of the NEPA process (which is now complete). Those activities will continue, including the work associated with the title surveys for the anticipated full-property acquisitions. Appraisals are ongoing on the properties needed for the Vehicle Maintenance facility. A relocation consultant, retained by the MBTA Real Estate Department, is assisting with the real estate elements of the Green Line Extension project. The GLX Relocation Plan, a document requiring approval by the Commonwealth before any business relocations can commence, has been prepared, reviewed and approved by the Commonwealth, and has now been submitted to the FTA for them to comment on. Additional schedules to implement the

real estate acquisition process in a prioritized manor are being developed in conjunction with the MBTA's Real Estate department and then will be incorporated into the overall program schedule.

Specifically, in order to support the Phase 1 construction work described below, the real estate process to permit the construction work to proceed is now complete, with compensation made to all property owners affected by the Phase 1 construction and the necessary temporary construction access licenses have been executed.

In addition, the MBTA executed a July 26, 2012 Memorandum of Understanding (MOU) with the City of Somerville. Under this MOU, the City will convey the necessary land parcels at the proposed Union Square Station site to the MBTA. These parcels will be acquired by the City of Somerville and will be conveyed to the MBTA in spring 2013.

Coordination meetings continue to be held with HYM and the City of Cambridge in regard to the Lechmere station and area around it, roadway designs and phasing plans. Coordination has also been ongoing with Archstone and the developer for 22 Water Street in this area.

The team also has been working with the City of Somerville in regard to property issues at Gilman Station and Ball Square Station and to review concepts generated by the City's "Somervision" planning process.

Design Progress:

Many project milestones have already been reached on the Green Line Extension project, including completion of the Advanced Conceptual Engineering for: seven stations, bridges, viaducts, corridor and maintenance facility; update of the design criteria; the preparation of the design definition report; preparation of an accessible access report for each of the station sites; roadway plans and the functional design report for the roads and intersections. In addition, the programming for the maintenance facility and development of the traction power, communications and security systems concepts and designs, initial cost and schedule reviews, and the development of revised program delivery plans along with project phasing plans have also been completed.

The final volume of the Advanced Conceptual design plans was submitted to the MBTA on August 15, 2012. These submittals were delivered in phases, with the in-progress Advanced Conceptual design plans for the seven stations submitted in late May, the design submittals for the bridges and roadways in late June, and the viaduct, track and guideway components submitted in mid-August. Comments on the design submittals have now been addressed and incorporated into the Advanced Preliminary design as necessary.

As the station and bridge design has continued, new questions and design challenges have developed. Some of these new issues relate to emergency egress and accessibility requirements, while others are linked to the receipt of new, more detailed survey information and recently identified utility conflicts. In order to reach resolution of egress issues the MBTA has now submitted a variance request to gain acceptance of the Advanced Conceptual Design of the emergency egress from the end of four station platforms (College, Ball, Lowell, and Union). In early March, these variance requests were all granted, allowing for design to proceed on the emergency egress elements off the end of these station platforms. Work is also proceeding on revisions to the Ball Square station layout to resolve NStar and MWRA utility issues.

The PM/CM design studies have been completed and provided to the APE/FD team for design direction. Of particular note, evaluation of drainage issues and solutions at Washington Street Station and the Redbridge-Northpoint area; these alternatives were presented by the project team to the MBTA and a plan forward has been endorsed and direction given to the Design consultant. The concept design for a relocated and repurposed 2nd entrance at Lechmere (it will now be both an exit and an entrance) has also been accepted and direction given to the design consultant to incorporate it into the design going forward. Concepts have been developed illustrating how a second head house could be added in the future at the Union Square station. These options have been reviewed with the City of Somerville and the study completed. The designs of Ball Square Station and Gilman Station have proceeded taking into consideration the design study at Ball Square, the before-mentioned “Somervision” process and the ideas accepted from the VE study. Overall the size of the stations has been reduced by about 10 percent.

The phasing of the roadway improvements at Lechmere (O’Brien Highway, North First Street, and Water Street) which are the responsibility of the NorthPoint development project, continue to be an item of discussion between the GLX team and the NorthPoint developer, along with the design of O’Brien highway improvements. Discussion also continues between NorthPoint, the City of Cambridge, and the members of the East Cambridge neighborhood. The GLX project is also coordinating the Viaduct design with the Archstone II development and the 22 Water Street developer.

The project team has continued to meet and coordinate design issues with representatives from the three communities including: (1) Conducted a meeting with the City of Somerville and Friends of the Community Path on the path connections in the Red Bridge area and met with the City of Cambridge on interim parking near Lechmere Station; (2) A meeting with the City of Medford on the revised Ball Square plans; (3) Meetings with the City of Somerville and the City of Medford on the Phase 1 Construction Plan, a local abutters meeting for the work around the Harvard Street bridge location as well as one with the general public in regard to the Phase 1 work. As a follow-up to the January 2013 Coordination meeting with the Mass Historic

Commission on the details of the viaduct demolition, a Historical American Engineering Report (HAER) is being prepared for submittal in March 2013.

Detailed design work on the Phase 1 Early Bridge/Demolition¹ package is complete. This package includes (1) the widening of two railroad bridges to accommodate the additional Green Line tracks and (2) the demolition of the MBTA tire storage building at 21 Water Street in the Lechmere area to provide parking and staging areas for the Phase 2/2A work.

This construction package was advertised for bids on July 16, 2012, following receipt of the July 9th FONSI from FTA. Bids were taken on September 6, 2012 and a pre-award meeting was held with the apparent low bidder. This Phase of the GLX Project will be funded completely by the Commonwealth of Massachusetts. The MBTA General Manager awarded the Phase 1 contract to Barletta Heavy Construction on December 13, 2012. MBTA issued Notice to Proceed to Barletta Heavy Construction on January 31, 2013. As stated, the contractor was introduced to the local residents and businesses at community meetings in March. Field activities are anticipated to start shortly and shop drawings and submittal activities are underway.

Public Outreach:

Public outreach on the project has included hundreds of meetings and other events over multiple years. MassDOT and MBTA staff have met with numerous public groups, elected officials, and other interested parties. There have been two different project advisory committees, including the former Project Advisory Group and the current Design Working Group. Meeting types have included meetings of those groups and their subcommittees, station workshops, design review sessions with right of way abutters, interagency meetings, neighborhood briefings, briefings with elected officials, institutional and business group meetings, public meetings and hearings, land use workshops, and 'meet and greet' sessions, as well as many others.

Details of the design of the stations, including the relationship of the stations to the pedestrian, bicycle, and bus networks around them, are now more fully developed. The MBTA completed two rounds of public design workshops in order to engage the public in developing the 'look and feel' of the stations and the areas around the stations. These workshops occurred in late spring/summer of 2011 and then again in the winter/spring of 2011-2012. The MBTA has used the information and input collected at the workshops and from the Green Line Extension Design Working Group to complete the summer 2012 Advanced Conceptual Design set. The Design Working Group had a meet and greet meeting with the Advanced Conceptual/Final Design consultant and the timing of and subject matter for the next meeting is under discussion.

¹ Background on the Project Phasing is found below in this section of the report.

Project staff has also met with the abutters to the Phase 1 construction work, around Harvard Street, as well as representatives of Tufts University, the City of Medford and the City of Somerville. An overall Phase 1 public meeting is scheduled for March 14, 2013 which will discuss among other things, scope, schedule, contacts, the hotline, coordination with the Fire departments and proposed road detours. The project team also continues to respond to inquiries to the project website with regard to scope, schedule and coordination.

Project Phasing and Delivery:

To tailor the project delivery method to best mitigate the larger project risks, MassDOT and MBTA are implementing a phased project delivery plan. This delivery plan recommends dividing the project into (at least) four phases.

Phase 1 will rely on the traditional Design-Bid-Build approach to deliver the contract for the widening of the Harvard Street and Medford Street railroad bridges and the demolition of 21 Water Street. As noted above, the contract award occurred in December and the NTP was issued on January 31, 2013.

Subsequent construction phases will use the Construction Manager/General Contractor (CM/GC) approach, a project delivery method incorporating an integrated team approach to design and construction. The use of CM/GC on the Project was approved as a pilot project by the legislature and signed into law by the Governor on June 19, 2012. The MBTA Board of Directors also approved this project delivery approach at its July 11, 2012 meeting. After a series of meetings were held in September and October, the OIG approved MBTA's plan to move forward with the CM/GC approach on November 29, 2012. With this last approval now in hand, the MBTA issued a request for Letters of Interest on December 7, 2012 to firms for CM/GC services. Responses from interested firms were received on January 4, 2013 and CM/GC Qualification Statements received on February 19, 2013. The most qualified firms have been notified and the Request for Proposals was issued on March 11. Proposals are due in April and the contract is currently scheduled for award at the July 2013 Board meeting. In addition, an Independent Cost Estimator (ICE) procurement is underway, with a Request for Qualification Statements issued on February 25, 2013, with Qualification Statements due on March 29, 2013. It too is expected to go to the July Board meeting for approval.

Phase 2/2A will extend service from the (new) Lechmere Station to the Washington Street and Union Square stations and relocate the bus facility at Lechmere and the ongoing vehicle storage. Completion dates for this phase are based on assumptions related to two key FTA submissions: (1) New Starts FY 2015 update/Application in September 2013, and (2) that FTA agrees to issue a "Letter of No Prejudice" (permitting certain Phase 2/2A activities to proceed into construction prior to the granting of a Full Funding Grant Agreement) for the project. With these assumptions, this phase is anticipated to start by mid 2014, complete construction in late 2016 with testing and startup in early 2017.

Phase 3 will construct the vehicle maintenance facility and storage yard. As the full yard and maintenance facility are not needed to support initial passenger service to Washington Street and Union Square, this phase has been scheduled to be complete some six months ahead of the date for revenue service to College Avenue. It is anticipated that the relocation activities of the current occupants of the VMSF site will be completed by the end of 2015 such that site cleanup and demolition can start shortly thereafter.

Phase 4 will provide service from Washington Street Station (completed as part of Phase 2 above) to College Avenue Station by the end of July 2019. The risk evaluation process referenced below indicates that this phase, representing the completion of the Green Line Extension project, has a 50% probability of completing on or before the July 2019 date. It also assumes that the FTA approves the project plans to advance under pre-award authority certain utility work at the bridges in 2014 ahead of the full funding agreement, with the bulk of construction starting in 2015 after receipt of the Full Funding Grant Agreement.

Potential Challenges

By filing an Expanded Environmental Notification Form, procuring multiple design consultants, and publishing both Draft and Final Environmental Impact Reports, MassDOT has met the first four interim milestones associated with the Green Line Extension project. MassDOT – which has committed substantial resources to the Green Line Extension project, a top transportation priority of the Commonwealth and the largest expansion of the MBTA rapid transit system in decades – has transitioned the project from the planning and environmental review phases to design, engineering, and has begun construction, coupled with the tasks associated with applying for New Starts funding.

In the 2011 SIP Status Report, MassDOT reported that the Green Line Extension project would not meet the legal deadline of December 31, 2014. At that time, MassDOT projected a timeframe for the introduction of passenger service on the Green Line Extension. The points within the timeframe are associated with different probabilities, as shown below:

- 10% Probability of Not Exceeding – Autumn 2018
- 90% Probability of Not Exceeding – Summer 2020

This schedule for overall project completion remains in effect.

MassDOT and the MBTA continue to seek measures to accelerate the project timeline wherever possible. The phasing approach discussed above should provide for an accelerated delivery of some portions of the project. In addition, MassDOT and the MBTA have succeeded in receiving legislative, Office of the Inspector General and MBTA

Board of Directors authorization to use the CM/GC delivery method described above, which is expected to aid in meeting the dates above and overcoming some of the delays that were encountered related to the FONSI and the approval to enter into PE.

An additional major critical path item is the completion of the next steps in the New Starts process, including being able to complete the design and the finance plan to the extent necessary for completion of the September 2013 New Starts update to the FTA and completion of the package for initiation of the negotiations for a full funding grant agreement by February 2014.

Finally, although the goal of the phased project delivery approach is to complete components in an incremental manner, the timeline for overall project completion listed above represents a substantial delay beyond the current SIP deadline of December 31, 2014, triggering the need to provide interim emission reduction offset projects and measures for the period of the delay (beginning January 1, 2015). Working with the Central Transportation Planning Staff, MassDOT and the MBTA are currently initiating the process of calculating the reductions of NMHC, CO, and NOx – reductions equal to or greater than the reductions projected for the Green Line Extension itself, as specified in the SIP regulation – that will be required for the period of the delay. MassDOT and the MBTA have also worked with the public to develop a portfolio of interim projects and/or measures that may meet the requirements, and are currently seeking input from the public on the portfolio.

In June 2012, MassDOT released a list of potential mitigation ideas received from the public that could be used as offset measures. MassDOT received public comments on the potential measures and is now moving forward with further refining – based on technical analyses and on the public comments received - potential portfolios of measures to present to DEP and the public for implementation in 2015.